

WHAT IS CLAIMED IS:

1. A semiconductor device comprising:

a semiconductor mesa portion formed on a substrate, including a stack of at least a collector layer, a base layer, and an emitter layer formed in narrower region compared with said base layer, and functioning as an active region of a bipolar transistor;

a base contact pad mesa portion formed on said substrate apart from said semiconductor mesa portion and formed with a height the same as the height of the top surface of said base layer; and

a conductive layer formed integrally with a base electrode formed connected to said base layer at part of a region of formation of said base layer other than the region of formation of said emitter layer, a base contact pad electrode formed above said base contact pad mesa portion in a region other than near the edges of the top surface of said base contact pad mesa portion, and an interconnect for connecting said base electrode and said base contact pad electrode.

2. A semiconductor device as set forth in claim 1, wherein the surface layer of said base contact pad mesa portion is formed by the same layer as said base layer.

25 3. A semiconductor device as set forth in claim

1, wherein the area under said conductive layer between said semiconductor mesa portion and said base contact pad mesa portion forms a space.

4. A semiconductor device as set forth in claim 1, wherein an insulating film is formed below said conductive layer between said semiconductor mesa portion and said base contact pad mesa portion.

5. A semiconductor device as set forth in claim 1, wherein said base electrode is formed in a region other than the region of formation of said emitter layer and other than near the edges of said base layer.

6. A semiconductor device as set forth in claim 1, wherein a distance between said semiconductor mesa portion and said base contact pad mesa portion is 1 to 5 μm .

7. A semiconductor device as set forth in claim 1, wherein said semiconductor mesa portion is comprised of a stack of a compound semiconductor and has a heterojunction bipolar transistor.

8. A method of producing a semiconductor device having a bipolar transistor including an emitter layer, a base layer and a collector layer on a substrate, comprising the steps of:

forming a stack of at least a collector layer, a base layer, and an emitter layer on a substrate;

patterning said stack to form, separated by a predetermined distance, a semiconductor mesa portion including a stack of at least a collector layer, a base layer, and an emitter layer formed in a narrower region than said base layer and functioning as an active region of a bipolar transistor and a base contact pad mesa portion having the same height as the height of the top surface of said base layer and having a surface layer comprising the same layer as said base layer;

forming, between said semiconductor mesa portion and said base contact pad mesa portion, a covering layer having a top surface higher than the height of the top surface of said base layer on said substrate and covering at least up to near the edges of the top surface of said base contact pad mesa portion;

and

forming a conductive layer above said covering layer using said covering layer as a mask and integrally forming a base electrode connected to said base layer at part of the region of formation of said base layer other than the region of formation of said emitter layer, a base contact pad electrode above said base contact pad mesa portion in a region other than near the edges of the top surface of said base contact pad mesa portion, and an interconnect connecting said base

electrode and said base contact pad electrode.

9. A method of producing a semiconductor device as set forth in claim 8, further comprising the step of removing said covering layer after the step of forming
5 said conductive layer.

10. A method of producing a semiconductor device as set forth in claim 8, wherein the step of forming said covering layer comprises forming said covering layer by an insulating film.

10 11. A method of producing a semiconductor device as set forth in claim 8, wherein:

the step of forming said covering layer comprises forming said layer so as to cover up to near the edges of said base layer of said semiconductor mesa
15 portion; and

the step of forming said conductive layer comprises forming said base electrode in a region other than the region of formation of said emitter layer and other than near the edges of said base layer.

20 12. A method of producing a semiconductor device as set forth in claim 8, comprising forming said semiconductor mesa portion by a compound semiconductor to form a heterojunction bipolar transistor.